10/021,531   G0215

COMPLETE LISTING OF THE CLAIMS

This listing of the claims replaces all prior versions, and listings, of the claims in the subject application:

1-28   (Cancelled)

29.   (New) An overetch system comprising:

a metal etcher to perform overetching;

a target device placed in the metal etcher; and

an overetch controller coupled to the metal etcher to control overetching and removal of an overetch amount of material from the target device, the controller including:

an overetch time controller;

a set of etch control models that comprise three dimensional information; and

a control system.

30.   (New) The system of claim 29, wherein the target device is a wafer including at least one semiconductor device including a metal layer comprising aluminum or an aluminum alloy.

31.   (New) The system of claim 30, wherein the wafer has an oxide layer covered with remaining residue from a metal etch process.

32.   (New) The system of claim 31, wherein the remaining residue comprises unremoved aluminum.

33.   (New) The system of claim 29, wherein the metal etcher is able to perform metal etching and metal overetching.

34.   (New) The system of claim 29, wherein the overetch controller controls overetching utilizing feedback data.

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35.   (New) The system of claim 29, further comprising at least one sensor to measure feedback data of the target device during overetching and to provide the feedback data to the overetch controller, wherein the overetch controller utilizes the feedback data to control overetching.

36.   (New) The system of claim 29, wherein the overetch time controller initiates and halts the metal etcher during overetch processes.

37.   (New) The system of claim 29, wherein the control system is implemented on a computer system.

38.   (New) The system of claim 29, wherein the control system identifies the target device and selects at least one relevant model from the set of etch control models.

39.   (New) An overetch system comprising:
       a metal etcher that performs overetching;
       a target device placed in the metal etcher; and
       an overetch controller coupled to the metal etcher to control overetching and to control removal of an overetch amount of material from the target device, the controller including:
              an overetch time controller that initiates and halts the metal etcher during overetch processes;
              a set of etch control models that includes layout data, etchable area, and percentage of etchable area; and
              a control system.

40.   (New) The system of claim 39, wherein the control system is implemented on a computer system.

41.   (New) The system of claim 39, wherein the control system identifies the target device and selects at least one relevant model from the set of etch control models.

42.   (New) The system of claim 39, wherein the etch control models comprise two-dimensional information.

43.   (New) The system of claim 39, wherein the etch control models comprise three-dimensional information.

44.   (New) The system of claim 39, wherein the target device is a wafer including at least one semiconductor device including a metal layer comprising aluminum or an aluminum alloy.

45.   (New) The system of claim 44, wherein the wafer has an oxide layer covered with remaining residue from a metal etch process.

46.   (New) The system of claim 45, wherein the remaining residue comprises unremoved aluminum.

47.   (New) The system of claim 39, wherein the metal etcher is able to perform metal etching and metal overetching.

48.   (New) The system of claim 39, wherein the overetch controller controls overetching utilizing feedback data.

49.   (New) The system of claim 39, further comprising at least one sensor to measure feedback data of the target device during overetching and to provide feedback data to the overetch controller, wherein the overetch controller utilizes the feedback data to control overetching.

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50.   (New) An overetch system comprising:

a target device;

a metal etching means for removing an overetch amount of material from the target device; and

an overetch control means for controlling the metal etching means, the overetch control means comprising:

a set of etch control models that comprise three dimensional information;

a timer means for initiating and halting the metal etching means; and

a control means for selecting at least one relevant model from the set of etch control models and determining an overetch endpoint.

51.   (New) The overetch system of claim 50, wherein the set of etch control models include layout data, etchable area and percentage of etchable area.

52.   (New) An overetch removal system comprising:

a target device;

a metal etching means for removing an overetch amount of material from the target device; and

an overetch control means for controlling the metal etching means, the overetch control means comprising:

a set of etch control models that include layout data, etchable area and percentage of etchable area;

a timer means for initiating and halting the metal etching means; and

a control means for selecting at least one relevant model from the set of etch control models and determining an overetch endpoint.